

REMARKS

Claims 1-17 and 19-21 were previously pending in the application. Claims 8-9 have been amended. New claim 22 has been added. Claims 1-17 and 19-22 are now pending in the application. Favorable reconsideration and allowance of the application are respectfully requested.

I. Claim Rejections Under 35 USC §103(a)

Claims 8-11, 16-17, and 20-21 are rejected under 35 USC §103 as being unpatentable over Dozier II in view of Chobot.

Claims 8-11, 16, and 20-21

Independent claim 8 recites an electronic assembly including a printed circuit substrate including a retentive through hole, a housing and a plurality of solder masses for electrically connecting the connector to a substrate. A retentive structure extends from the surface of the housing and is positioned within the through hole. The retentive structure is made with a material that is configured to separate from the retentive structure and combine with a solder composition within the through hole to affix the electrical connector to the circuit substrate at temperatures that initiate reflow of the plurality of solder masses.

Independent claim 9 recites a retentive structure extending from a surface of the housing and being received by a through hole formed in the substrate for effecting a non-electrical connection with a circuit substrate. The retentive structure is made with a material that separates from the retentive structure and combines with a solder composition and alters a physical property of the solder composition in contact with the retentive structure within the through hole.

The Office Action acknowledges that Dozier II fails to teach or suggest that the retention structure is made with a material for combining with a solder composition within the through hole to affix the electrical connector to the substrate at temperatures that initiate reflow of the plurality of solder masses. Furthermore, Dozier II fails to teach or suggest a retentive structure having a material that is configured to separate from the retentive structure and combine with a solder composition, as recited in independent claims 8 and 9.

Accordingly, as discussed in Applicant's Response to the January 14, 2008 Office Action, Dozier II suffers from the drawbacks of the prior art because it does not disclose a retentive structure having a material that can combine with the solder material. Further, Dozier II does not teach forming a mechanical joint between the retentive structure and a board that comprises a combination of the material and the solder. Accordingly, Dozier II does not teach a joint that will resist reflow during further processing.

Chobot fails to cure the deficiencies of Dozier II. Chobot merely discloses a multi-layer circuit board having a retention pins that can be affixed within an opening via a solder material (see, e.g., Fig. 8). Applicant was unable to identify any teaching or suggestion in Chobot for providing the retention pin with a material that can separate from the retentive structure and combine with a solder composition within the through hole to affix the electrical connector to the circuit substrate at temperatures that initiate reflow of the plurality of solder masses.

Moreover, with respect to independent claim 9, Applicant could find no teaching or suggestion within either Dozier II or Chobot that material separating from the retentive structure alters a physical property of the solder composition in contact with the retentive structure within the through hole

Accordingly, even if Dozier II and Chobot are combined in the manner suggested in the Office Action, the combination fails to teach or suggest each element recited in independent claims 8 and 9. Applicant asserts the patentability of claims 8 and 9 as providing sufficient basis for the allowability of corresponding dependent claims 10-11, 16, and 20-21.

Furthermore, claim 20 depends from claim 8, and recites that the combination of the material and the solder composition has a higher melting temperature than the melting temperature of the plurality of solder masses. Likewise, claims 10 and 21 depend from claim 9, and recite that the melting temperature of the material that combines with the solder composition is greater than the melting temperature of a solder mass that extends from the substrate. Claim 11 depends from claim 10, and recites that the temperature is increased by at least 10 degrees Celsius. Applicant could find no teaching or suggestion in the cited prior

art of an increased melting temperature due to a combination of the solder material with material that has separated from the retention member.

Withdrawal of the rejection of claims 8-11, 16, and 20-21 under 35 USC §103 is respectfully requested.

Claim 17

Independent claim 17 recites a retentive structure extending from the surface of the housing, spaced apart from the plurality of solder masses, and being for positioning within a circuit substrate through hole. The retentive structure comprises a material that is for combining with a solder composition within the through hole such that the melting temperature of the combination of the material and the solder composition is greater than the melting temperature of the solder masses.

The Office Action acknowledges that that Dozier II fails to teach or suggest a retention structure made with a material for combining with a solder composition within the through hole to affix the electrical connector to the circuit substrate at temperatures that initiate reflow of the plurality of solder masses, such that the melting temperature of the combination of the material and the solder composition is greater than the melting temperature of the solder masses.

The Office Action therefore cites Chobot as allegedly overcoming the deficiencies of Dozier II. In particular, the Office Action notes that Chobot discloses a retention pin inserted into a retentive through hole that is filled with solder composition material. However, the Office Action fails to offer any citation within Chobot that teaches or suggests that the retention pin comprises a material that combines with a solder composition such that the melting temperature of the combination is greater than the melting temperature of solder masses that are spaced apart from the retention pin.

The Office Action states that it is well known in the art to combine a material from a retention pin with solder material such that the combination has a higher melting temperature than the solder. However, the Office Action cites no reference for this conclusion. Accordingly, Applicant respectfully requests that Official Notice be taken, or that the Office

Action cites prior art that teaches or suggests this claim limitation in a manner that is properly combinable with the cited prior art.

Because the cited prior art, alone and in combination, fails to teach or suggest the claim limitations of independent claim 17, withdrawal of the rejection of claim 17 under 35 USC §103 is respectfully requested.

II. Claims 13 and 15

Claims 13 and 15 are rejected as being unpatentable in view of Dozier II in further view of Melton. Applicant cites the patentability of independent claim 9 as providing sufficient basis for the allowance of corresponding dependent claims 13 and 15. Withdrawal of the rejection of claims 13 and 15 is respectfully requested.

III. Claims 12 and 14

Claims 12 and 14 are rejected as being unpatentable in view of Dozier II in view of Findeis.

Applicant cites the patentability of independent claim 9 as providing sufficient basis for the allowance of corresponding dependent claims 13 and 15.

Furthermore, Applicant could not find any teaching or suggestion within Findeis to use the gold-plated I/O pins in a soldering process, let alone a soldering process that attaches an electrical component on a substrate.

Withdrawal of the rejection of claims 12 and 14 is therefore respectfully requested.

IV. Allowable Subject Matter

Applicant notes with appreciation that claims 1-7 and 19 have been allowed.

V. New Claims

Applicant has added new claim 22 that depends from claim 17, and recites that the material separates from the retention member so as to combine with the solder composition. For reasons discussed above, Applicant asserts that none of the cited prior art teaches or suggests this claim limitation. Formal allowance of claim 22 is respectfully requested.

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VI. Conclusion

Applicant therefore asserts that each objection and rejection to the claims has been overcome, and a notice of allowance is earnestly solicited. The Examiner is hereby authorized to contact the undersigned at the telephone number appearing below if such would advance the prosecution of this application.

The Commissioner is hereby authorized to withdraw the \$182 fee including the fee for the addition of one dependent claim greater than twenty (\$52) and one-month extension (\$130), along with any additional fees deemed due for the filing of this or any other correspondence, from Deposit Account No. 23-3050.

Respectfully submitted,

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